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Maternal Hygiene in Wartime

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THE rapid and marked increase in the birth rate, in the course of the last three years particularly, coinciding with the exacting needs of the war for medical and nursing services, has created the need to provide a better distribution of services, and has also prompted many agencies to initiate new activities, or amplify already existing services, in order to provide mothers with a sufficiency of care.

One realizes at once the extent of the problem when one knows that there were, in 1942, some 42,000 more live births registered in Canada than in 1939—the exact number being 271,914 as compared with 229,468; and one must take into account also another 25,000 to 35,000 pregnancies which did not reach full term, or did not result in a live birth.

The following efforts have been made to cope with this difficult situation:

1. A special committee of the Canadian Medical Association was appointed to collaborate with the Selective Service authorities to help in maintaining an adequate medical service for the civilian population.
2. The Federal and Provincial Divisions of Industrial Hygiene and industries have combined their efforts to protect mothers and expectant mothers engaged in war work.
3. The Victorian Order of Nurses has inaugurated a service whereby mothers are provided with additional care on their return home from the hospital following the birth of their babies.
4. The St. John Ambulance Association has also greatly intensified its activities in training in first aid and home nursing, thereby supplying an additional number of voluntary workers in our hospitals and our homes.

Presented at the wartime conference and thirty-second annual meeting of the Canadian Public Health Association, held in the Royal York Hotel, Toronto, on October 4 and 5, 1943.

5. The Canadian Red Cross Society has introduced in many centres visiting-housekeepers who give valuable help to mothers during this time of stress.
6. Local agencies have also developed in order to provide mothers with care.

Some of the voluntary agencies, notably the Victorian Order of Nurses, are anxious to increase their usefulness to the Canadian public, and have facilities to extend their activities considerably. We can probably contribute greatly in this direction through informing the public of the existence of these agencies, of the character of their activities, and of the value of their services.

The results obtained, if judged in the light of the vital statistics relative to puerperal mortality, would seem to indicate that we have been fairly successful, since the maternal mortality rate, according to preliminary figures for 1942, is 2.9 per 1,000 live births—the lowest rate ever recorded for Canada.

I might add that it is gratifying to note that the improvement in the maternal situation seems real rather than accidental, since it has been gradual and steady, and particularly because it has occurred during the war years when conditions did not seem, in many ways, too favourable.

In 1936 the maternal mortality rate was				5.6	per	1,000 live births.
In 1937	"	"	"	4.9	"	"
In 1938	"	"	"	4.2	"	"
In 1939	"	"	"	4.2	"	"

In the three years preceding the war, the reduction in the rate was 25 per cent.

In 1939 the maternal mortality rate was				4.2	per	1,000 live births.
In 1940	"	"	"	4.0	"	"
In 1941	"	"	"	3.5	"	"
In 1942	"	"	"	2.9	"	"

Although starting in 1939 with a much more favourable situation, thus rendering improvement more difficult, the figures show that, during the first three war years, the progress corresponds to a 30 per cent amelioration in the rate. In addition, this means that in 1942 only 796 maternal deaths were recorded instead of 1,192 which would have been the case if the rate of 1939 had prevailed in 1942.

However encouraging these results may be, the situation does not allow us to slacken our efforts; on the contrary, conditions warrant that we should increase them, as an analysis of the causes of death shows that 73 per cent of our fatalities in 1942 were due to sepsis, toxaemia and haemorrhage. And, moreover, the low rate of mortality does not imply that mothers are furnished with the maximum of care conducive to the best of health for themselves and for their babies.

The occasion of this marked improvement in the course of a few years affords us a unique opportunity to determine more definitely the main factors which influence our results in maternal hygiene.

As previously indicated, there does not seem to be any achievement in medical science to account for the marked successes registered in these war years. They have given us the opportunity, nevertheless, to appreciate the high calibre of obstetrics as practised by our Canadian physicians, and they bespeak the

quality of care which mothers receive in our hospitals, since approximately half the number of the births take place in hospitals.

Also, that there is no technical reason to account for the improvement is attested by the fact that the major causes of deaths were, to an equal degree, favourably affected, with the exception perhaps of toxaemia which showed a somewhat greater improvement, as the following figures show.

In 1939, 13	mothers	per	10,000	live births	died from sepsis.
In 1942, 10.9	"	"	"	"	"
In 1939, 10.1	"	"	"	"	toxaemia.
In 1942, 5.4	"	"	"	"	"
In 1939, 6.9	"	"	"	"	haemorrhage.
In 1942, 5.1	"	"	"	"	"

On the other hand, we have good reason to believe that better nutrition is playing an important role in enhancing the results in maternity. It is generally conceded, I think, that the Canadian public since 1939 has benefited from a richer and better-balanced diet. The reasons given in support of this view are that economic conditions have made it easier for the people to provide themselves with proper food. Food products, as a result of rationing and price-control regulations, are, unquestionably, more evenly distributed and more easily accessible. And, finally, the very active campaign favouring good nutrition has no doubt created a deep impression in the public mind. That being the case, mothers naturally benefit from this helpful trend, and the results therefrom tend to confirm the views of scientists concerning the advantages of good nutrition in childbirth.

In support of the factor of nutrition, you are well aware of the striking demonstration which resulted from the study carried out in Toronto by Drs. Tisdall, Ebbs and Scott. I might refer also to a report published by the Royal Society of Medicine, in June 1938, to the effect that out of 10,384 cases where the diet of expectant mothers was supplemented with eggs, vitamins A and D, and a food containing vitamin B, during the last months of pregnancy, the maternal mortality rate was 1.6 per 1,000 live births, whereas in the same locality and during the same period of time, it was 6.1 in 18,854 mothers whose diets were not supplemented.

More recently, we have been inclined to lay much emphasis on the effect of good nutrition in the prevention of toxaemias of pregnancy. It is significant that, following the prevalence of better nutrition, the rate of mortality from toxaemias of pregnancy should have shown a more marked improvement than other causes. In this connection let me mention my article in the *National Health Review* of April 1942, outlining the views of leading scientists as to the effects of nutrition on toxaemias of pregnancy. Also, I might quote from a report published by Bertha S. Burke, M.A., on a 12-year research program undertaken by the Department of Child Hygiene of the School of Public Health of Harvard University, wherein the following statement is made:—"In this study, no mother whose diet during pregnancy was considered 'good' or 'excellent' had pre-eclampsia, while

with a 'poor to very poor' diet during pregnancy, almost 50 per cent had pre-eclampsia."

In dealing with nutrition during pregnancy one must also take into account the outcome of pregnancy in so far as the child is concerned. I quote again from the report of the research carried out by the School of Public Health of Harvard University, as follows:—"If the diet of the mother during pregnancy is poor to very poor, she will, in all probability, have a poor infant from the standpoint of physical condition. In the 216 cases studied, every stillborn infant, every infant who died within a few days of birth (with the exception of one), the majority of infants with marked congenital defects, all premature and all 'functionally immature' infants were born to mothers whose diets during pregnancy were very inadequate."

Before leaving the subject of nutrition, I wish to submit that this aspect of the hygiene of pregnancy does not seem to receive the attention it deserves on the part of hygienists, as a special endeavour. With the exception of a few local and sporadic efforts, too little consideration is given to nutrition in pregnancy and lactation. I base this opinion on the evident lack of reference to this question both in recent maternity surveys and in prenatal records of clinics and of practitioners.

Possibly there was justification for this apparent neglect not so long ago, when principles governing good nutrition in pregnancy and lactation were not sufficiently established, but during recent years we have come into possession of a working knowledge which demands more definite interest. For instance, the following daily dietary requirements are considered essential:

Calories	2,400 to 2,800
Proteins	80 to 100 grams
Carbohydrates	350 to 400 grams
Fats	80 to 100 grams
Calcium	1.5 grams
Iron	0.2 grams

VITAMINS

Vitamin A	6,000 international units.
Vitamin B-1	500 to 1,000 international units
Vitamin B-2	3.0 to 3.5 mg.
Vitamin C	50 to 75 mg.
Vitamin D	500 to 1,000 international units.

This list corresponds to the following diet:

40 ounces of milk, daily.
1 ounce of cheese, daily.
1 egg, daily.
butter
meat, daily (some liver one day a week).
2 servings of vegetables, in addition to potatoes, daily.
1 orange, or a half grapefruit, or 5 ounces of tomato juice.
2 teaspoonfuls of cod liver oil, or its equivalent in concentrated form.
Half of the cereals and bread should be whole grain.
Iodized salt should be used.

Today it is considered that the protein requirements indicated above are particularly essential throughout pregnancy for the prevention of toxaemia.

Also, according to Dr. Wm. A. Scott, of Toronto, if the haemoglobin drops below 65 per cent, it is necessary to have recourse to sources of iron other than food.

The emphasis one has to lay on nutrition these days tends to place unfairly in the background the beneficial influence of our educational endeavours of some years back. This factor has probably contributed more than we can appreciate to our successes of today.

It is likely that everyone here finds mothers today keener than ever before to secure information on maternal and child care. The character of the letters we receive, and the ever-increasing demand for literature, attest to this fact. For instance, we have distributed upon request, in the course of the last three years, some 350,000 copies of our publication "The Canadian Mother and Child." As a result of this interest, there is greater enlightenment concerning a number of essential precautions, such as the need for medical supervision, for the adoption of more appropriate living conditions, etc. The prospects for a successful termination of pregnancy are thereby greatly enhanced throughout the country. The evident effectiveness of our educational endeavours, and the increased desire of mothers to obtain guidance, justify us, not only in maintaining our efforts at the present level, but of amplifying them in many respects.

I doubt if it is sufficiently realized that publications would be considerably more effective if more attractively presented. The subject of maternal hygiene and child care lends itself to more than a mere enumeration of cold facts, and, to obtain the maximum of results, we might well take fuller advantage of this opportunity. Dr. Nicholson Eastman, Professor of Obstetrics at Johns Hopkins Medical School, devotes an article to the need for this type of approach. He claims that much can be done to encourage a higher birth rate, to reduce the prevalence of abortion, and generally speaking, to enhance the chances of childbirth, through making motherhood appear more attractive.

Those of you who have seen the film, "The Birth of a Baby", have no doubt observed the distinct efforts made by the American Committee on Maternal Welfare to make motherhood more appealing. This is one of the aspects of the picture which, from all reports, has so profoundly impressed the public, and was responsible, in large measure, for the fact that nearly three-quarters of a million people saw this picture in the first eight months of its showing in the seven provinces where it has been accepted. I am sure I am not overestimating the value of this film, if I judge by the large number of enthusiastic comments we have received, and by the fact that these contain acknowledgments of the effective way in which the picture deals with the difficult subject of the relationship of sex to life, and that it serves well to impress fathers with their responsibilities, to lessen the fear of child-bearing, and to stress the risk and impropriety of abortion. These lessons, brought home to this large audience in such an engaging way, must contribute to the improvement of the maternal and child situation. Our

experience with this film surely suggests making use of the great possibilities of moving pictures in the field of maternal and child hygiene.

Another valuable means, which we have failed to exploit sufficiently in our educational efforts on behalf of motherhood, is the radio.

Profound modifications in the ways of life of our people are taking place during these troubled war years. Amongst the various factors accounting for these changes none, probably, is equal in importance to the influence exercised by the better financial position generally prevalent. Is this not also the reason for the sudden favourable trend in our maternal and child situation? Mothers are financially better able to avail themselves of appropriate care during the prenatal, intranatal and postnatal periods, and babies are benefiting from closer medical supervision, in spite of the fact that nursing, medical and hospital services are at present seriously disorganized. One is inclined, therefore, to attribute the slow progress in the pre-war years not to lack of knowledge of the principles of maternal and child hygiene, but rather to financial inability to take advantage of the facilities available.

In planning for the post-war period, it should be our aim to provide a sufficiency of service for all mothers and children throughout Canada.

CANADIAN PUBLIC HEALTH ASSOCIATION

ANNUAL MEETINGS

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TORONTO

ONTARIO HEALTH OFFICERS ASSOCIATION

Venereal-Disease Education in the High School

British Columbia's Experiment

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SINCE it is a well-recognized fact that seventy-five per cent of all venereal infections are contracted between the ages of fifteen and thirty years, it is apparent that a venereal-disease educational program worthy of the term should devote considerable attention to the youth of the community.

General agreement will be found among parents, educators and health authorities that young people should be protected in some measure against undesirable experiences and conditions associated with venereal disease, by providing them with an adequate understanding of its nature and control. This understanding is essential, not only for the protection of the individual, but for the development of his sense of responsibility towards others.

On the question of where, when and how to instruct youth on this subject there has, however, been less unanimity of opinion. For example, proposals for the introduction of "venereal-disease education" into high schools have, in many instances, produced vigorous support, but sometimes equally vigorous opposition is in evidence. Then, too, the technique by which venereal-disease instruction may best be given high-school students, the age at which this should begin, and other considerations, have arisen to challenge the courage and ingenuity of those charged with venereal-disease education.

When, in January 1940, the British Columbia Division of Venereal Disease Control embarked formally upon an organized program of education, a statement of policy included this observation: "It was agreed [by a representative committee of health authorities] that . . . failure to provide such training for students of high-school age would be to overlook one of the most important phases of public-health education."

The Division must confess to such failure during the following two years, inasmuch as opportunities to present venereal-disease educational materials and lectures to high-school students in the province were neither solicited nor accepted. There was, however, a reason for this seeming neglect. Investigation

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of existing high-school venereal-disease educational methods (in the United States) indicated that two principal approaches were used: Integration of appropriate phases of venereal-disease information into regular classroom studies (such as biology, science, physiology, health education, etc.); and an isolated formal lecture by a local physician, nurse or member of the health department. It was felt, with all respect to the high calibre of teaching personnel in the province, that the subject was not sufficiently well known by the teachers to assure satisfactory handling of the presentation in ordinary classroom work. Furthermore, the formal lecture (several state health departments had kindly forwarded to us specimen lectures) did not seem quite to meet our requirements, which, it must be admitted, were not at that time too clearly defined.

In January, 1942, the Division was precipitated into high-school education by somewhat fortuitous and fortunate circumstances. While lecturing in the City of Nanaimo to a number of adult groups, the writers were invited by the principal of the high school to "give a talk" to his students. This invitation was accepted because it occurred to us that the informal "round-table" discussion technique used in meetings with women's organizations might be suitable for use with high-school students. It was stipulated by the lecturers that only the senior grades (approximately sixteen years of age and over) should participate.

The experiment was successful and it was tried out in three other high schools during the next few months with equal success. On the basis of these experiences, the technique was modified slightly, and in September 1942, a brief was submitted by the Division to the Honourable the Minister of Education, outlining the methods used and requesting approval for adoption on a province-wide scale.

Endorsement by the Department of Education was given to the plan on the following basis:

(*a*) The Division would provide qualified lecturers who would adhere closely to the presentation as described in the brief.

(*b*) The Division would make its arrangements directly with the individual high schools regarding lecture schedules.

(*c*) Before a lecture could be given at any high school, the approval of the school board must be secured by the principal.

In the year that followed the official sanctioning of the program, thirty-eight high schools situated in all parts of British Columbia, with a total enrolment of five thousand senior-grade students, participated in this special lecture presentation, and without exception, no unfavourable repercussions have been observed.

The British Columbia Plan

Age Group

Experience with this type of program has indicated that for most effective results the minimum age of the students should be sixteen years. This opinion is based on the assumption that in most cases the lecture will be the first studied approach to the subject, and that, in the absence of previous instruction, students under sixteen are not likely to be sufficiently mature to take an active part in the discussion. In the few instances in which this rule was departed from, it has

been observed that a group representing an age range of, say, fourteen to nineteen years, does not enter the discussion as freely as a group in which the age range is narrowed to sixteen to nineteen years.

Frequency of Lectures

If the lecturing is carried on by health-department officials, and the geographical area to be covered is a large one, it may be necessary to plan the itinerary with a view to only one visit to a school in two or three years. By lecturing, in any one year, to the last three grades of a school, it would be three years before these grades would be composed of an entirely new group. If personnel and time permit, it might be desirable to present the lecture each year to the current sixteen-year-old group.

Segregation of Sexes

The informal-discussion type of lecture described herein requires the *active* participation of the students. If boys and girls are separated, they will respond more readily to the questions and feel more free to offer comments. In addition, there are certain aspects which require different interpretation for each sex. This view has been criticized on several occasions by enthusiastic persons who take the attitude that "if we're going to treat this problem in the open, why encourage 'hush-hush' by segregating the boys and girls for discussion of the problem?" It is the studied opinion of the writers that for *this type of presentation*, and for the *initial approach*, freedom from possible embarrassment is most desirable.

Selection of Lecturing Personnel

The selection of lecturing personnel is one of the most important considerations facing the health department. The manner in which the subject is presented is as important as the subject matter itself.

Some of the qualifications desired would include a thorough knowledge of the subject and a proven ability to lecture in an interesting, impersonal and completely objective fashion.

It is recommended that the lecturing be assigned to two qualified members of the health department. The woman lecturer should be, preferably, a nurse. The man need not be a doctor if he has adequate qualifications as a lecturer and a sound understanding of the public-health aspects of the venereal-disease problem.

The Lecture

The basic technique of this lecture presentation lies in the use of a "discussion guide" as a means of carrying on an informal discussion in the classroom. Reference to the specimen guide will indicate several reasons for its use:

(*a*) The questions cover all essential phases of the subject of venereal disease and its control.

(*b*) The questions require the students, by show of hands or verbally, to indicate their opinions or beliefs. This conveys to the lecturer how much (or little) the student body knows about a given point and enables him to correct or elaborate accordingly.

(*c*) The first questions are particularly innocuous, thus providing a period in which a possibly tense or apprehensive group is eased gently into the discussion.

FOREWORD

The purpose of the lecture programme in which you are participating to-day, is, primarily, to:

(a) Consider the main problems associated with the control of venereal disease.

(b) Give you a better understanding of your relationship to these problems.

The discussion will be based on the questions on the opposite page, and will be conducted in an informal "round-table" fashion.

GUIDE TO "ROUND-TABLE" DISCUSSION ON THE CONTROL OF VENEREAL DISEASE

1. Why, in the past, have most people known less about venereal disease than, for example, tuberculosis?
2. (a) For what reasons should EVERY CITIZEN be interested in the venereal disease control programme?
   (b) If you were in charge of a venereal disease educational programme, what methods would you use to educate your fellow citizens?
3. To whom should a person who suspects infection go for advice and care?
4. Are syphilis and gonorrhoea different stages of the same disease?
5. (a) Can syphilis be cured? (b) Can gonorrhoea be cured?
6. When not adequately treated, syphilis may cause a number of serious conditions. Insanity is one. Can you name others?
7. What are the most common ways of spreading syphilis? Intimate contact is, of course, most common. What are others?
8. How may an expectant mother with syphilis prevent such infection in her baby?
9. Why is it desirable for every person to have a health examination, including a blood test for syphilis, before marriage?
10. Should an employee with a venereal infection be permitted to carry on usual duties in a home or place of business?
11. Is prostitution an important factor in venereal disease control?
12. What facilities must be developed in your community to stamp out venereal disease?

Guide to round-table discussion on the control of venereal disease. In addition to the foreword and questions, brief answers—sealed until the completion of the lecture—are provided for future reference. The guide is $8\frac{1}{4}$ by $10\frac{1}{2}$ inches in size and is punched for filing with loose-leaf health notes.

(*d*) The students will become less restive with this type of presentation than with a formal lecture, since their participation adds considerable interest to the proceedings.

Method of Use:

Before the lecturer is introduced to the class by the principal or health teacher, a copy of the discussion guide should be given to each student.

The lecturer's introductory remarks should be brief and designed to create a friendly relationship between the class and himself, as well as to indicate the importance of the subject to be discussed.

It is desirable for each lecturer to prepare an introduction most natural to himself or herself, for a "canned" introduction might result in a stilted, unnatural

approach. The following is, therefore mentioned only as a possible method of beginning the lecture:

"Most of us know from our health studies what constitutes a public-health problem. We know, for example, that tuberculosis is one of the most important public-health problems because it is a threat to the welfare of many of our citizens.

"If we suddenly found there were fifty cases of infantile paralysis in the province, everyone would be very disturbed about it—and rightly so, because it would be considered a serious danger to public health.

"In other words, if a disease actively menaces the health and welfare of the citizens it becomes a matter of interest and concern to all of us. If that is true, we cannot overlook one of the most serious of all—venereal disease, because during the past year in this province there have been . . . new cases.

"I might mention that this is not going to be a 'lecture.' With your co-operation we're going to carry on an informal round-table discussion, and I would like you to feel free to comment on any point or ask questions at any time.

"Now, if you'll turn to the discussion guide which each has in front of you, we'll consider the first question."

From this introduction, the lecturer launches the general discussion by repeating the first question:

"Why, in the past, have most people known less about venereal disease than, for example, tuberculosis?"

If, as usually happens, several students raise their hands, one should be asked to give his opinion. As there are several possible answers, the students should be encouraged to explore this question further. If, by chance, no student raises his hand (and this could happen at first with a particularly reserved group), the lecturer should point to a likely-looking student and ask him what he thinks.

As the discussion proceeds, the lecturer will find that more and more students participate. No two situations, however, will be the same. Student reactions will vary with the size of the school or community, the progressiveness of the teaching personnel, etc. In some instances the discussion will be lively, and in others the lecturer will have to be resourceful in order to stimulate the students.

Never belittle an answer that is sincerely given. If it is inaccurate, try if possible, to find some justification for it by suggesting "Well, that might happen in some cases, but that wasn't quite what we had in mind. How about so and so—do you think that would apply?" (Or some appropriate remark which lets the student down gently.)

The discussion will have to be kept moving along in order to cover all the points. Experience will enable the lecturer to judge the most suitable pace.

A good film (such as "With These Weapons") should be shown at the conclusion of the discussion period. This helps to crystallize the points made by the speaker, and adds interest to the program.

Following the film, the speaker should take no more than about two minutes to conclude the program. At this time he can:

(*a*) Tell the students not to worry about venereal disease. He can remind them that accidental infection is, for practical purposes, impossible, and that if they conduct themselves as they should, they need have no worry of becoming exposed to a venereal infection.

(*b*) Mention that the teacher will give each student a booklet which will cover the subject in further detail and will serve as a reference.

(*c*) Express his pleasure at having had the opportunity of meeting with them, and thank them for making the lecture both easy and enjoyable for him.

General Suggestions

Limit the program to one hour: five minutes for class assembly and introductions, forty-five minutes for discussions, and ten minutes for the film. Do not overstep the time limit agreed upon as it makes it difficult for the school to adjust its time-table.

See that the principal of the school is thoroughly acquainted with the proposed arrangements before the lecture.

Make certain that the moving-picture projector is set up, ready for use, before the class assembles.

Be sure that the literature that is given to the students is suitable.

It is recommended that little clinical detail be given in the course of the lecture.

Results of the Lecture

If the lecture has been presented effectively, it will be found that the lecturer has covered all the points which could have been presented in a formal lecture; the students have a sound understanding of the essential facts about venereal disease and its control; a number of common fallacies have been exploded; venereal-disease discussion has been lifted to a high level; the students have a sound appreciation of the fact that this is a public-health problem with which all citizens should be concerned, and they will have a better understanding of the personal and community social responsibilities involved.

Student Reactions

In order to test the soundness of this type of presentation, it was decided to secure a representative sampling of student opinion. This was in addition to an independent inquiry of parent-teacher opinion carried out by the Greater Vancouver Health League, from which not a single unfavourable criticism was recorded.

During November, 1943, the students of eight high schools, mostly in the Greater Victoria area, were asked to complete a questionnaire. This questionnaire was given to them within a day or two of the lecture (timed so that the lecture would have had time to "sink in"and yet not be dimmed by too long an interval).

On the next page a summary* of the answers is presented without interpretation or qualification, so that the reader may draw his own conclusions.

Conclusions

The British Columbia plan may not provide the ideal answer to the health department or board of education which asks: "How may we best provide

**Because of limitations of space, it is not possible to give a complete summary of the answers to the questionnaires. Readers who are interested in having such a summary are invited to write to the Division of Venereal-Disease Control, Provincial Board of Health, 2700 Laurel Street, Vancouver, B.C.*

venereal-disease instruction for high-school students?" The writers can only state that in the two years in which the plan has been in operation in British Columbia, this technique of presenting a comprehensive outline of the venereal-disease problem and its solution has been well received by all concerned.

It is entirely probable that the plan envisaged by such noted authorities as Dr. Maurice Bigelow, whereby instruction in regard to venereal disease will be related to other communicable diseases in a properly integrated school health unit, will sooner or later be adopted routinely by all schools.

In the meantime, the plan outlined herein offers to the progressive health department and school board—where other plans may not, for various reasons, appear entirely practicable—an immediate opportunity to provide the youth of their community with essential knowledge which may otherwise be denied them.

APPENDIX

Tabulation of High-School Questionaires

Number of Students: Boys.....250
Girls.....300
Total.....550

Number of Schools: Rural....3 (110 students)
City.....5 (440 students)

Ages of students: With a few exceptions the students were sixteen years of age or over.

Note.—The questionnaires were unsigned (except for the identifying word "boy" or "girl," and grade to which the student belonged).

Question	Boys		Girls		Both	
	Total	Per cent	Total	Per cent	Total	Per cent
1. "*Did you like the lecture?*"						
(*a*) Yes	250	100.0	293	97.6	543	98.7
(*b*) No	...	....	5	1.6	5	0.9
(*c*) Not answered	...	....	2	....	2	....
2. "*Were the points discussed made sufficiently clear? (Please list any which were not)*"						
(*a*) Yes	228	91.2	259	86.3	487	88.5
(*b*) No	15	6.0	37	12.3	52	9.4
(*c*) Not answered	7	....	4	....	11	....
3. "*Were any of the terms used by the lecturer 'over your head'?*"						
(*a*) Yes	19	7.6	55	18.3	74	13.4
(*b*) No	223	88.4	240	80.0	463	84.1
(*c*) Not answered	8	....	5	....	13	....
4. "*Were there any parts of the discussion to which you felt further time should have been given?*"						
(*a*) Yes	100	40.0	95	31.6	195	35.4
(*b*) No	130	52.0	186	62.0	316	57.4
(*c*) Not answered	20	....	19	....	39	....
Comments:						
"Prevention and cure of venereal disease"	17	....	24	....	41	....
"A more thorough discussion of the symptoms of the disease"	20	....	12	....	32	....
"How the disease is contracted"	7	....	13	....	20	....

Questions	Boys		Girls		Both	
	Total	Per cent	Total	Per cent	Total	Per cent
5. *"Which part of the lecture did you consider most valuable?"*						
Comments:						
"Cause and spread of venereal disease"	74	....	75	....	149	....
"How to avoid venereal disease"	44	....	53	....	97	....
"Entire discussion"	37	....	54	....	91	....
"Treatment and facilities for treatment"	26	....	48	....	74	....
"Symptoms"	26	....	32	....	58	....
"Consequences of infection"	15	....	28	....	43	....
6. *"Which part of the lecture did you find most interesting?"*						
Comments:						
"Entire discussion"	43	....	85	....	128	....
"Cure of venereal disease"	43	....	42	....	85	....
"The cause and spread of venereal disease"	38	....	34	....	72	....
"Community control of venereal disease and public education"	33	....	23	....	56	....
7. *"Did the informal 'round-table discussion' appeal to you, or would you have preferred a formal lecture?"*						
(*a*) Preferred round-table discussion	226	90.4	267	89.0	493	89.6
(*b*) Would have preferred lecture	14	5.6	25	8.3	39	7.0
(*c*) Not answered	10	....	10	....	20	....
Comments:						
"I think the round-table discussion is better; it gives other people's views about it"						
"I think the round-table discussion was more informative and more instructive than a formal lecture."						
"I think the same information would be given quicker and better by a formal lecture."						
"One feels freer to ask questions. It makes the audience feel much more at ease."						
8. *"Would you like to have the subject discussed from time to time during the regular health period?"*						
(*a*) Yes	225	90.0	232	77.3	457	83.0
(*b*) No	15	6.0	53	17.6	78	14.1
(*c*) Not answered	10	....	15	....	25	....
Comments:						
"If we could have someone well enough up on the subject."						
"No. Everything was made clear."						

Questions	Boys		Girls		Both	
	Total	Per cent	Total	Per cent	Total	Per cent
9. *"Did you find the film* instructive?"*						
(*a*) Yes	206	82.4	252	84.0	458	83.2
(*b*) No	40	16.0	45	15.0	85	....
(*c*) Not answered	4	....	3	....	7	....
Comments:						
"Not as much as the lecture"	8	....	10	....	18	....
"No; definitely not."	1	....	2	....	3	....
"Definitely, yes."	4	....	11	....	15	....
*"*With These Weapons.*"						
10. *"Have you any other suggestions or criticism to offer?"*						
(*a*) No	126	50.4	156	52.0	282	51.2
(*b*) Vague or not applicable	6	....	6	....	12	....
(*c*) Not answered	48	....	54	....	102	....
Comments:						
"Have some more lectures like the first."	20	....	31	....	51	....
"Subject should be discussed in more detail."	15	....	19	....	34	....
"Greater use of films, and better films."	10	....	8	....	18	....

Note.—In a number of cases similar expressions of opinion have been grouped by phrasing the answer in the most appropriate language.

The Laboratory and Social Medicine*

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IN 1906 at the dedication of the new buildings of the Harvard Medical School, Dr. W. H. Welch said:

"The opening of the new laboratories of the Harvard Medical School marks the culmination up to the present time of an educational and scientific movement which has been the most distinctive characteristic of the development of medicine during the past fifty years and which has transformed the face of medicine. The rapid growth of laboratories for the cultivation of the various medical sciences has been at once the cause and the result of the rapid progress of medicine in recent years. By discovery they have widened the boundaries of old domains and opened to exploration entirely new fields of knowledge by the application of which man's power over disease has been greatly increased."

Now that the promise of peace may be discerned there looms a multitude of social, political and economic problems beyond the horizon of war, problems from which the laboratory worker cannot isolate himself. In fact, one can anticipate that he will be more involved and affected by proposed changes than some of his professional brethren.

Certain questions arise: To whom does the term laboratory worker refer? What of the status of the laboratory in the world of medicine today? And what of the future position of the laboratory physician in the proposed new social order?

Physiologists, biochemists, bacteriologists and pathologists are especially associated with laboratory work. Following the rapid expansion of their activities, these special groups devoted their energies to the development of work lying within their own particular spheres and a certain separation between each of these groups occurred. It was to be expected that bacteriology and pathology would drift apart, since one was directly concerned with the causes of disease and the other with its results. However, some pathologists retained a wider vision with the result that to-day clinical pathology is concerned with a study of the etiological factors and with prevention. For a decade the torrent of laboratory effort has been directed into the streams of its various groups, and each gave abundant new life to its particular area. Latterly these streams have dwindled and the complexities of modern scientific medicine require a re-diversion of the separate streams so that once again they may merge into a river of greater power and purpose.

A further question arises: Are these groups to act separately or as a body in advancing the viewpoint of the laboratory for consideration by those who

Chairman's Address, presented at the twelfth annual Christmas meeting of the Laboratory Section, Canadian Public Health Association, held in the Royal York Hotel, Toronto, on December 15 and 16, 1943.

are formulating plans of reconstruction? Perforce the views I present here are coloured by the outlook of bacteriology and preventive medicine.

Welch typified the high position the laboratory worker held in the practice and councils of medicine at the beginning of this century. During the past twenty years a change has taken place, a subtle change that has placed the laboratory at a definite disadvantage.

With the perfection of methods of treatment founded upon discoveries made in the laboratory, medical practice forged ahead. Governments established free diagnostic services in the bacteriological and serological field to aid the practitioner and to further the aims of preventive medicine. This aid was augmented in the spheres of clinical pathology, biochemistry and physiology, both in hospital and in private laboratories. The practitioner, particularly the specialist, accepted these services as his due and gradually, if unintentionally, developed an attitude of looking upon all the laboratory services as only a handmaiden to his own work. This attitude has led to the gradual divorcing of the laboratory and the laboratory physician from the clinical case and clinical medicine.

For some years past in the programs of the annual meetings of the Canadian Medical Association there have been but few contributions from, or with reference to, the laboratory. We have been obliged to seek expression elsewhere and naturally the bacteriologists and many of those engaged in medical research have turned to the public health associations. This section does not represent a branch of the Canadian Medical Association, we are a section of the Canadian Public Health Association. This situation has been in part responsible for and emphasizes the unfortunate, ever-growing sharper division between curative and preventive medicine, a separation that is incompatible with medical progress and in the light of experience is not logical. Also it has become increasingly customary for many to extol the wonderful achievements made in the field of medicine, particularly preventive medicine, without referring to the work of the scientist who fundamentally made such achievements possible and with little reference to the essential factor that further progress will largely depend upon the efforts of those who work in the laboratory. This attitude is not confined to Canada. Be that as it may, our relationship with the public-health organizations has been a happy one and it is gratifying to note that some of those in spheres of public-health work other than our own take an active part in these proceedings.

The character of the personnel of the laboratory also has been partly responsible for an alteration in our status. The rapid development of the diagnostic laboratories has required the employment of great numbers of technicians. So rapid has been this expansion that in some places the technicians, although lacking medical education, assume full responsibility for the work, and on occasion even for the interpretation of laboratory findings. It is essential that laboratory technicians should have medical direction by those specially qualified. The valuable aid given by trained technicians and their position in the laboratory will be enhanced under medical supervision; their future is bound up with ours. This does not discountenance the fact that

certain scientists with basic training in associated sciences, though lacking medical training, have through their exceptional ability attained to high and honoured places in the field of medical laboratory endeavour.

Another factor adversely affecting the laboratory may be noted in our medical schools in which there has developed a division into so-called clinical and pre-clinical years. As a result of this weakening of the links of medical education, there has existed for some time a tendency for many students to consider the subjects of the curriculum associated with laboratories as something to be put aside when they attain the supposedly important heights of clinical specialists. Much better that from the moment a student enters a medical school he should be impressed by word and deed with the fact that all the subjects in which he receives instruction have a direct and fundamental relation to the prevention and treatment of disease.

Two years ago in an address before this group on the changing place of the laboratory in public health, Dr. C. E. Dolman dealt fully with many aspects of that field of work and with the multitude of problems pertaining to the laboratory. If that address were read by those in the profession outside our field, it would enlighten them on many of our common problems. Certain weaknesses in our position were deftly outlined. Complex problems exist and I am unaware that at any time in Canada has any effort been made to obtain from the directors of the laboratories as a body a considered opinion of the possible solution of any of these difficulties. Dolman stressed among other factors pertinent to this discussion the question of unnecessary work. Certainly the reputation of the laboratory has not been enhanced by undertaking unnecessary work or by carrying out the large volume of unnecessary examinations demanded. Perhaps some laboratories, reflecting the zeal of their personnel, undertake to do the unnecessary. Certainly some in an apparent effort to provide a super-service in serology run a battery of several tests so that when it comes to the interpretation of results, as Moore and Eagle aptly state, "not only the average practitioner but also the expert, whether clinician or serologist, is likely to be completely befuddled."

These, after all, are defects that are subject to correction. It can be stated frankly that the standard set for the laboratories is high and the work has on the whole measured up to those standards; one seldom hears the voice of criticism. Responsibility for the change that has taken place cannot be associated with lack of efficient service.

Some responsibility, however, for our present status rests upon the physician in the laboratory, especially the research worker. True, he is not responsible for the ever fewer numbers of his kind permanently engaged in this sphere of work, but he has been too prone to accept the general trend and to become oblivious to the social changes in the making. The easy road leads to seclusion within the walls of his laboratory.

I use the word "unfortunate" advisedly in describing the general trend. The culmination of effort of all those who work in the laboratory is interpreted only by the practical results achieved in the broad field of medicine. This postulates that it is essential to the value of his work now and in the future,

and also for the progress of medicine, that the laboratory medical worker should be in close contact with his medical colleagues. He should also have available a knowledge of the patient and of the medical and social problems pertaining to the work and to those with whom his work is concerned.

This proviso is also retroactive. The rapid increase in numbers of special spheres of medical activity has definite advantages, but also has resulted in the development of a certain isolation of interests. Study of the history of medicine discloses that the progress of the science of medicine resulted from the co-ordination of all the knowledge of its various groups. This co-ordination stimulated original work, which in turn gave birth to new knowledge, the fruition of which was completed only by the co-operation of all those engaged in medical effort.

We are then, or we should be, each and all a part of the whole. In the deliberations concerning the proposed social re-organization it is of moment to consider who is shaping and presenting the views and attitude of the medical profession. Does a co-ordinated effort exist? I doubt the extent of that co-ordination. The medical associations, the administrative officers of the public-health departments of governments, and also some of the specialists, have expressed certain points of view. One seldom detects the voice of the general practitioner, although we hear much about him. And what of the medical man in the Armed Forces and in the laboratories? Have their personnel been consulted or are they and we lost to the councils of medicine?

The public through social legislation will demand a new design for medical practice—call it a new type of fighting plane to be used in the war against disease. There is little doubt but that plane will be launched upon its flight. However ornate or brightly painted the fuselage may be, it will be one of the chief responsibilities of the laboratory worker to see to it that the materials used in the plane's construction are sound, that all the intricate mechanism which makes the plane's sustained flight possible is mechanically correct and that the weapons installed therein to fight disease are efficient; or, if the enemy increases or changes his methods of destruction, to design new and better weapons to meet the threat. The method of financing the cost and the selection of the personnel to fly the plane and man the weapons may fall within the sphere of the medical association and the governmental public-health organizations and governments.

Proposals now exist to place the medical profession on a definite financial basis. Possibly we are freed of the peculiar inhibitions that have so long obtained in discussion of medical finance. On the whole, for the value of his services the laboratory worker in medicine receives the least compensation of all his medical colleagues. The monetary fruits of his labours all too frequently are garnered by others.

We might contemplate as it affects the laboratory one proposal that has been advanced for financing medicine in a plan of health insurance for Canada —a comprehensive and detailed plan that has considerable merit and that quite evidently required an enormous amount of preparation. Of the total fund for medical care, this proposal allots 2.8 per cent to the laboratories,

which includes the X-ray departments. That allotment, I am informed, does not include sums for the bacteriological laboratories, one of the services to be left to the mercies of local governments.

Most certainly any proposed medical re-organization will be lacking in essential aims if it fails to make ample provision for research. Nor should medical schools and bacteriological laboratories be overlooked when the time comes to allotting support and funds for research, or for that matter for all their activities. Here too it is not amiss to point out to those who think of medicine in terms of finance, which infers economy, that the research worker who could discover the means to control influenza would save the public in a short space of time a goodly portion of the 250 million dollars or more, which it is suggested will be required annually for social medical services in Canada.

One ponders, too, on the future position of research institutions, such as the Connaught Laboratories, which have attained a deservedly high reputation in the medical world and which, although attached to educational institutions are both federal and international in their activities. We should like to know that the future of such institutions is secure. Whatever the future organization may be, it is to be hoped that those who plan it will make a careful study of the geography of this great country of ours and its associated economic problems. At present many physicians are seriously handicapped by the lack of hospital and laboratory facilities in the areas in which they are practising.

Pertinent to the consideration of these various problems and uncertainties is the fear uppermost in the minds of many, but seldom expressed in public—a fear of a central domination of all medical affairs (a trend towards this centralization is now evident); a fear also that in the new order regimentation and bureaucracy may develop both for preventive and curative medicine, and initiative and research be stifled.

Better far to reflect on Pasteur's words: "If the conquests useful to humanity touch your heart, then I implore you to take some interest in those sacred dwellings meaningly described as laboratories. Ask that they may be multiplied and completed. They are the temples of the future of riches and comfort, while humanity's own works are too often those of barbarism, fanaticism and of destruction." Surely these words should ring down through the ages and not be lost to the generations of those who contemplate social changes for the betterment of mankind.

The laboratory worker is the keystone, the fountainhead of the science of medicine and of its future advances. Your predecessors have achieved great victories over the forces that produce disease. The greatest benefits to mankind have resulted from the triumphs gained through the efforts of the research worker in the never-ending competitive struggle for existence between the multicellular and unicellular forms of life. Before you who are laboratory workers, I make this statement not in praise but as one of fact and in full recognition of the knowledge that those persons who as a result of good fortune, ability and opportunity have discovered something new and of value to medicine and humanity are exceedingly humble in their understanding of

how little they have been able to accomplish and how much remains in the realms of the unknown.

An inner voice whispers: ethics—ideals. Ethics is a science subject to interpretation and change; ideals are spiritual, and the spiritual survives. If we abide by our ideals, the problem of ethics largely solves itself. Enquire of the younger medical men to-day, especially ask those who practise in the larger urban centres, for their views on modern medical ethics and you will be disturbed by the answers. Irrespective of the irritations, the difficulties and the hardships which will be imposed upon the members of the medical profession in the changing social order, medicine will survive and hold an honoured place if all its members hold strictly to our ideals. If not, failure looms ahead perhaps as surely as the high hopes held by many of us in 1918 for a world of perpetual peace failed of fulfillment twenty years later. I have faith, however, that in every branch of medical endeavour there are enough progressive physicians, endowed with both courage and tolerance, to accept responsibility of leadership in bringing about an equitable co-ordination of all services in any form of medical re-organization that is designed to benefit the entire people.

Although at present all our efforts are devoted to the essential demands of war, in our thoughts and in such time as we can spare it behooves us to contemplate and formulate plans for the future. As the nature of your work teaches you to be critical, to separate and develop fact from theory, you will insist upon the practical. This association of laboratory workers is the most logical one I know of in Canada which might be able to co-ordinate the opinions of those engaged in laboratory services and to present our common views. The obligation rests particularly on the younger members of this group to study the proposed social changes and to be assured that the laboratories and medical research will receive the consideration which their value to all medical effort and to the betterment of man's lot demands.

In springtime I have been thrilled at the sight of flocks of golden plover as they passed over the prairies on their way to the Arctic tundras. I marvelled at their sense of direction, for in autumn that frail but beautiful bird takes off from the Arctic on an 8000-mile flight across trackless wastes of land and ocean to reach with unerring precision a haven far beneath the equator. I pondered the comparison to man and his natural gifts or lack of such gifts. For the profession of medicine to steer a course of successful purpose through the vast maze of intangibles that face us in this changing world will be extremely difficult. We must devote our energies to that end. For those who work in the laboratory I would recall the words of Confucius: "It cannot be, when the root is neglected, that what should spring from it will be well ordered."

A Chronic Typhoid Carrier

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ON March 30, 1942, Monique W. came down with typhoid fever. Monique, three years old, was living with her parents in the City of Quebec, in a protected environment, drinking only safe water and pasteurized milk. The child had spent the three previous week-ends at her grandmother's, Mrs. B., at Château-Richer, a quaint and nice little village near Ste. Anne de Beaupré, on the shore of the St. Lawrence River.

On the occasion of her visits to her grandmother, the child had taken raw milk procured from a local dealer, C., but no other case could be traced to this source. The water system supplied fifteen families. This water came from a spring, but surface water could be introduced into the system through a cross-connection during droughts and this had been done in February and March. *B. coli* was found in a water sample taken for analysis. No other case of typhoid fever could be attributed to this water, but, on the other hand, Monique was the only child who was not used to this drinking water. The origin of the case was attributed to the consumption of water of doubtful quality. *B. typhosum* was isolated from the faeces and classified as type F according to the method of Craigie and Yen.

In October 1943, Madeleine L., a 16-months-old cousin of Monique W. and also a granddaughter of Mrs. B., came down with typhoid fever while visiting at Château-Richer from September 9th to October 24th. The child had been at her grandmother's for more than a month when the first symptoms of the disease were observed: thus, the case belonged to Château-Richer. An isolation of *B. typhosum* was made and again we had a strain of type F.

The occurrence of a second case of the same type in the family led us to the possibility of a carrier in the home, leaving aside the water-borne origin of the cases. Whilst our investigation was in progress, Madeleine had been brought back to her father's, Dr. L. at Cap-de-la-Madeleine, and on November 7, 1943, Dr. L.'s maid, Domithilde R., came down with typhoid fever. An isolation of the bacillus was made from the faeces, with again a type F strain. It was rather easy to determine a direct contact between Madeleine and the servant: the maid used to hold the safety pins in her teeth while changing the diapers of the baby.

At Château-Richer, the investigation was being made and soon centered around Mrs. B. herself. In September, 1898, during a visit to Charlesbourg, she came down with a disease diagnosed clinically as typhoid fever by the physician. The disease was not severe, though the patient was in bed for twenty-one days. Later she entered the boarding school of the Ursulines, where she made her

Presented at the twelfth annual Christmas meeting of the Laboratory Section, Canadian Public Health Association, held in the Royal York Hotel, Toronto, on December 15 and 16, 1943.

studies. She was married when she was twenty-four years old and raised a large family, but none of her children ever got typhoid fever or a disease resembling an enteric infection.

In August 1937 she went to Syracuse, N.Y., with her husband, and eight days after her return home she came down with a rather severe paratyphoid B fever. A blood culture was made and *B. paratyphosum* B isolated.

In September 1943 Mrs. B. was admitted to l'Enfant-Jesus Hospital in Quebec for hepatic troubles, with jaundice: an X-ray plate showed four gall-stones and a long bladder.

She returns home to find her granddaughter Madeleine L. on a visit. One day Madeleine is found in the bathroom playing with a face-towel in the water-closet.

The first specimen of faeces submitted by Mrs. B. gives an isolation of *B. typhosum*, type F. This person of a very nice education has been a chronic typhoid carrier for forty-five years.

In summary, the investigation shows the following sequence of events:

1. The first typhoid case, Monique W., an F type, was thought to be water-borne.

2. The second case (Madeleine L.) was also caused by an organism of the F type and led us to look for a carrier.

3. The maid was contaminated by Madeleine directly, and was also an F type.

4. The grandmother, Mrs. B., was proved to be a typhoid carrier of the F type.

5. Mrs. B. has been a carrier for forty-five years.

6. In the past months, she has been suffering from gall-stones and it is to be presumed that on the occasion of bile discharges into the intestines she has been passing bacilli located in the gall-bladder.

7. The typing being done as a routine in our Laboratories, two successive F types invited us to search for a carrier, when it was perfectly reasonable to think that the cases could be water-borne.

In conclusion, this carrier should not bring any additional cases: Mrs. B. is a person of good education who knows how to wash her hands and she has put a Yale lock on the toilet room.

Alkyl-Dimethyl-Benzyl-Ammonium-Chloride* as a Sanitizing Agent for Eating Utensils

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THE prevention of disease and the maintenance of health are subjects widely discussed today. The agencies whereby the nation's health is adversely affected are multiple and, one by one, science has sought them out for the purpose of destroying them or blocking their mode of transmission. The results of this scientific research, especially in these later years, have been magnificent. Smallpox, diphtheria and typhoid fever have been conquered and the other communicable diseases are yearly lessening in intensity due to better methods of control and a better understanding of the manner in which they are propagated.

One mechanical means through which disease-producing organisms leave their host and are carried to an unsuspecting new victim has been very definitely found to be the unclean eating utensil. To emphasize the need of safeguarding health by procuring a truly clean utensil, I might cite several examples of the numerous organisms isolated from utensils in the days before any definite action was taken to protect public health by demanding proper sanitization of eating utensils.

In Lansing, Michigan, in 1935 the average count before chemical sterilization was introduced was 17,000 per utensil (1). In Plainfield, New Jersey, in 1936 counts averaged 50,000. In four Ontario cities counts averaged 200,000 (2). *Staphylococcus albus* and *aureus, B. coli,* haemolytic streptococci, pneumococci, diphtheria bacilli and virulent tubercle bacilli have all been isolated from eating utensils (3). These conditions prevailed until some suitable method was developed for reducing to a minimum the florae of bacteria on utensils. Numerous methods have been proposed and attested to. Live steam, ultra-violet light, hot water and chemicals as bactericides have all been employed to a greater or lesser degree, depending upon circumstances.

The use of chemicals has attained a prominent place amongst the three methods mentioned above. Various chemicals have been used, the majority of which contain chlorine in some form. Recently our attention was drawn to a product which appeared to be an answer to all the innumerable problems arising out of the use of chlorine compounds. This new product is an organic compound consisting of a mixture of a number of alkyl-dimethyl-benzyl-ammonium-chlorides, derived from the fatty acids of cocoanut oil. Nixon (4), in investigating the toxicity of the product, found that no evidence of toxic properties was shown on laboratory animals drinking solutions as strong as 1:250. Walter (5) also

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**Alkyl-dimethyl-benzyl-ammonium-chloride, supplied through the courtesy of the Alba Pharmaceutical Company, Windsor, Ontario.*

demonstrated its non-toxic properties. Krog and Marshall (6) showed that the chemical is very stable over long periods of time and under heavy usage and that temperatures do not affect the stability or bacterial efficiency adversely above a temperature of 70° F. Scales and Kemp (7) found this product very much less corrosive than sodium hypochlorite solution. That the product possesses definite bactericidal properties has been demonstrated by Walter and Hucker, Nixon, Scales and Kemp, Krog and Marshall. These physical properties are much-needed requisites for a product intended to be used as a sanitizing agent for eating utensils in public eating and drinking establishments; and as chlorine compounds do not possess the degree of stability, non-corrosiveness or non-toxicity that this product apparently did, it seemed ideal for the procuring of a really clean utensil. Furthermore, as the product was practically odourless and tasteless in the concentrations recommended, it was felt that it would make an ideal sanitizing agent if it could be demonstrated to be practical and effective. For this reason, the co-operation of a number of food-dispensing establishments and several hotels was enlisted and they agreed to replace temporarily the chlorine compounds then being used, with alkyl-dimethyl-benzyl-ammonium-chloride.

Instructions for the use of the compound were issued. In the food-dispensing establishments, the dishes were first washed in hot, soapy water and then rinsed in clean water containing the sanitizing agent in concentrations varying from 1 in 4000 p.p.m. to 1 in 8000 p.p.m. The time specified for immersion was approximately two minutes. In the taverns the glasses were first rinsed in cold water and then rinsed in a solution of the sanitizing agent of the same strengths as those used in the eating establishments. At unspecified times swabs of utensils and specimens of rinse water were taken in the conventional manner from stacked utensils and submitted to the Peterborough Branch of the Provincial Laboratories for bacterial analyses. The results of these analyses are shown in Table I. Total plate counts and examinations for colon bacilli were made on each specimen collected.

As will be observed, the total plate counts were, for the most part, below 100 per utensil and as this is generally considered a satisfactory count it seemed that alkyl-dimethyl-benzyl-ammonium-chloride was effective. A further demonstration of this is seen also from Table I, indicating the complete absence of organisms of the colon group. This is true even where the wash water was heavily polluted with colon (establishment no. 13, Table II). Several specimens did exceed the one-hundred count but these are so much out of line with the others that it seems reasonable to suggest that they were accidentally contaminated after treatment.

In Table II the comparison of wash and rinse waters is clearly indicated. In a number of instances 1-cc. samples of wash water showed a very high bacterial content—so high, in fact, that counts could not be taken. For the rinse water, however, counts of zero were recorded. In no case were colon organisms found in the rinse water.

Several operators were asked to use the rinse for a specified period and it

was found in several taverns that after six hours the bacterial counts were still as satisfactory as at the beginning. The same thing was true of the solution used for twenty-four hours at the Isolation Hospital in Peterborough. In the

TABLE I

Establishment Number	Utensil	Plate Count	Colon Count	Establishment Number	Utensil	Plate Count	Colon Count
1.	Cup	140	0	8.	Glass	0	0
	Cup	70	0		Glass	300	0
	Cup	60	0		Glass	50	0
2.	Glass	0	0	9.	Glass	40	0
	Glass	60	0		Glass	30	0
	Glass	70	0		Glass	1900	0
3.	Glass	20	0	10.	Glass	40	0
	Glass	30	0		Glass	30	0
	Glass	10	0		Glass	10	0
4.	Cup	90	0	11.	Glass	0	0
	Cup	20	0		Glass	20	0
					Glass	60	0
5.	Knife	20	0				
	Fork	30	0	12.	Glass	70	0
	Spoon	10	0		Cup	0	0
6.	Spoon	0	0	13.	Glass	70	0
	Spoon	10	0		Glass	0	0
	Cup	0	0				
	Glass	0	0	14.	Glass	10	0
	Glass	80	0		Glass	20	0
7.	Glass	10	0	15.	Glass	30	0
	Glass	30	0		Glass	20	0
	Cup	0	0				

TABLE II

Establishment Number	Wash Water		Rinse Water	
	Total Count	B. Coli	Total Count	B. Coli
1.	Too numerous to count	0	2 per cc.	0
2.	4	0	0	0
3.	4	0	1	0
			* 4	0
4.	2000	1	0	0
5.	120	0	0	0
6.	....	..	** 0	0
7.	1450	0	84	0
8.	85	0	0	0
9.	100	0	0	0
	....	..	0	0
10.	35	0	0	0
11.	Too numerous to count	0	0	0
12.	200	46	0	0
13.	Too numerous to count	Too numerous to count	30	0
14.	Too numerous to count	5	0	0
15.	Too numerous to count	1	0	0

*Rinse used from 10.00 a.m. until 4.00 p.m. in tavern.
**Rinse used 24 hours in hospital.

hospital at that time there were cases of measles, scarlet fever, whooping cough and possible meningitis. Bacterial examination of the rinse water after it had been used to sanitize the utensils for twenty-four hours showed negative total plate and *B. coli* counts.

One item of utensil sanitation, although not entirely neglected, has not received the attention it may possibly require, i.e., the ice-cream scoop at soda fountains. The most common practice of restaurateurs is to keep this scoop in a container of water which may or may not be changed frequently. It has been suggested that the scoop be kept in a tank arranged in such a way that the water is continually changing. This, no doubt, would reduce the number of bacteria and definitely would not increase it. However, the cost of equipment and particularly the shortage of metals make this method impracticable just now. It was felt that the use of alkyl-dimethyl-benzyl-ammonium-chloride might bring about a desirable change. With this in mind, a number of specimens of the water in which scoops were placed were taken aseptically and examined for bacterial content. Although no *B. coli* were found, the counts ranged from 64 to millions per cc. We then induced the operators to keep the scoops in a solution of alkyl-dimethyl-benzyl-ammonium-chloride in a concentration of 1:5000. Specimens of the solution were taken at different times during the operational period and the counts in all cases were less than ten. This was found to be true even after twenty-four hours' use. Apparently the amount of organic material carried over on the ice-cream scoop had little or no effect upon the sterilizing properties of the product.

To determine the presence and concentrations of alkyl-dimethyl-benzyl-ammonium chloride in the rinse solution, a test kit developed by R. P. Cargille Ltd. and designed especially for inspectors of departments of health was used. This test is based upon the fact that the chemical combines with various acidic dyes to form coloured compounds which are extractable from alkaline solution by ethylene dichloride or chloroform. Since soap, ammonia, ethanolomines, sodium phosphates and temperature do not interfere, the test is simple and specific. Place in a test tube 0.5 cc. of the solution to be tested. Add 2.5 cc. of N/1 NaOH and shake well. Add 3 cc. of ethylene dichloride or chloroform and shake well. Add Bromothymol Blue (0.02 per cent) one drop at a time, shaking after each addition. In this way, the blue colour will be taken out of the aqueous layer by the organic solvent layer until all the chemical present has combined with the indicator. After this point is reached, the aqueous layer will retain the added blue colour, making a definite end-point easily observed.

Summary

From the foregoing data it appears that hand-washed eating and drinking utensils may be effectively sanitized by rinsing them in a solution containing alkyl-dimethyl-benzyl-ammonium-chloride in a concentration of 1:5000 parts of water. The concentrations of this product do not seem to be greatly affected by the addition of organic matter. Ice-cream scoops may be effectively sanitized by the use of this chemical. The disinfecting value of the product does not appear to

be affected by prolonged periods of use. Concentrations of the chemical can be easily checked colourimetrically by any inspector in the field.

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Canadian Journal of Public Health

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CANADA NEEDS A NATIONAL DEPARTMENT OF HEALTH

THE establishing of three new departments of government—Social Welfare, Veterans' Affairs, and Reconstruction—was recently announced to Parliament by the Prime Minister. The Department of Reconstruction, as its name implies, will advance and co-ordinate the broad program designed to meet post-war needs. The proposed Department of Social Welfare will be responsible for the administration of insurance measures and those functions in the field of public health which are under the Health Branch of the Department of Pensions and National Health. The work of the Pensions Branch will be assumed by the new Department of Veterans' Affairs. The Department of Pensions and National Health will cease to exist. Hospitalization of returned soldiers, which forms such an important part of the program of the Department of Pensions and National Health, will be a responsibility of the Department of Veterans' Affairs. There will therefore be a separation of hospitalization, which is essentially a health matter, from the department charged largely with the responsibility for health, since the work of the Health Branch of the Department of Pensions and National Health will presumably be administered by the Department of Social Welfare.

It is most disappointing that, if the proposed measures are adopted, Canada will no longer have a national health department, even though the health services may be included in the broad designation "social welfare". This reorganization raises the whole question of the status of public-health services in the Federal Government. When the Department of National Health was established in 1919, following more than forty years of effort by leaders of all parties, there was widespread approval of centralizing public-health work in one department which would be represented in the Cabinet by the Minister of Health. In June 1928, however, when the Department of Soldiers' Civil Re-establishment ceased to function, the administration of veterans' affairs was transferred to the Department of National Health, which thereafter was known as the Department of Pensions and National Health. At that time public-health leaders felt concern lest the magnitude of the responsibilities of pensions might so overshadow those

of national health that progress in health work would be retarded. And although much has been accomplished, the disparity between the budgets of the two divisions has been striking, even taking into account the much larger appropriations necessarily required by the Pensions Branch. To-day, sixteen years after the amalgamation of the two departments, the budget for pensions is approximately fifty times that for national health.

Now, the progress of the past twenty-five years seems likely to be jeopardized as a result of the proposed reorganization. It is appreciated that the term "social welfare", in its full significance, implies due regard for health and that, without health, social welfare is impossible. Yet it seems most desirable that, since public-health and medical services are fundamental to social security, the words "national health" be included in the title of the proposed Department of Social Welfare in order that there may be a public consciousness of its importance—a consciousness which is essential to the achieving of all that social welfare implies. The omission of "national health" from the name of this department is likely to constitute a serious handicap to the advancement of public health in the post-war years and it is earnestly hoped that it is not too late to permit of further consideration being given to this matter.

CHEESE AND TYPHOID FEVER

A WIDE-SPREAD epidemic of typhoid fever involving many cases and several deaths, with cheese as the source of infection, was recently reported from Alberta. This is by no means the first epidemic of typhoid fever traced to cheese, nor will it be the last. The cheese-making industry has not considered it profitable or necessary to institute methods in the manufacture or distribution of cheese which would ensure a safe product. Legislative authorities have not found it expedient to require such precautions. When a sufficient number of similar outbreaks due to Canadian cheese have occurred, here and abroad, both the home market and the export market will suffer materially. It will then be profitable for the cheese-making industry to ensure, and expedient for legislation to require, a safe product. In the meantime, democracy will continue to suffer from one of its own vices, that unwritten rule by which expediency rather than principle governs policy—a privilege and, to some, a virtue of democracy.

The question as to whether or not pasteurization of the milk or pasteurization at any stage in the cheese-making process destroys the flavour or injuriously affects the quality of cheese is still a controversial one, with the authoritarian voice speaking on both sides of it. Authority and old cheese go well together, and who would want to lose the nippy flavour or the crumbly texture of good old Canadian Cheddar? But the time is long overdue when those authorities responsible for the welfare of the cheese industry in Canada should have provided, by adequate experiment, unequivocal and completely convincing data for or against the effects of pasteurization on cheese flavour and quality. If pasteurization does affect the flavour and quality of cheese unfavourably, ways of overcoming these effects might be found or other means of control of infection employed.

Experience has shown that typhoid-fever epidemics due to cheese have been limited to cheese under three months old, the ripening process being markedly deleterious to the typhoid organism. It is fortunate that this is so. It is understood that, at the outbreak of the war, the military authorities, acting on principle rather than on expediency, prohibited the purchase of cheese under three months old for use in the Army. That practice has, it is said, maintained the Army free from any outbreaks of typhoid infection due to cheese and at the same time provided a more palatable, even delectable, product for the mess table. But civilians can obtain, for the most part, only unripened cheese, in spite of their ruminating and grumbling at the lack of any nip that bites the tongue and makes one reach for still another piece. Is it impractical to require that cheese for civilian use should similarly be at least three months old? Where do the various departments of agriculture, in their proper concern for the welfare of the cheese-making industry, stand on this question? And where do the various departments of health stand, in their proper concern for the welfare of an unsuspecting and unprotected public?

AWARDS IN THE 1943 NATIONAL HEALTH HONOUR ROLL

FOUR Canadian cities and seven full-time rural health units have been granted a place on the 1943 National Health Honour Roll, which is sponsored by the Canadian Public Health Association in co-operation with the American Public Health Asociation and financed by the Metropolitan Life Insurance Company and the W. K. Kellogg Foundation. Listed alphabetically, they are:

CITIES

Hamilton, Ontario (Dr. J. E. Davey, Medical Officer)
St. Boniface, Manitoba (Dr. Paul L'Heureux)
St. Catharines, Ontario (Dr. D. V. Currey)
Windsor, Ontario (Dr. John Howie)

RURAL UNITS

Arthabaska County, Quebec (Dr. Emile Poisson)
Nicolet County, Quebec (Dr. A. Laperriere)
Okanagan Valley Health Unit, British Columbia (Dr. J. M. Hershey)
St. Hyacinthe-Rouville Counties, Quebec (Dr. J. Marc Bergeron)
St. James-St. Vital Health Unit, Manitoba (Dr. I. M. Cleghorn)
St. Jean-Iberville-Laprairie-Napierville Counties, Quebec (Dr. A. Lapierre)
Shefford County, Quebec (Dr. R. F. Bruneau)

This recognition for progress in community health protection was made on the basis of Evaluation Schedules submitted in March and April 1944 covering various health activities during the year 1943. In making the awards, emphasis was placed on specific measures for the control of communicable diseases, sanitation, maternity and child care, health education, and industrial health programs.

The Canadian Public Health Association will give public recognition to the winning communities at its annual meeting in Toronto during the first week of November, when engraved plaques will be presented to the medical officers.

Suggested Requirements for the Health Supervisor on the Staff of the Hospital School of Nursing

ONE of the more recent developments in the preparation of the undergraduate of the hospital school of nursing is the appointment to the staff of certain schools of a health supervisor whose function it is to bring into relief and to co-ordinate all of the opportunities for health instruction which present themselves in the life of the student nurse and in the care of the hospital patient. The report which follows was prepared by the Public Health Nursing Committee of the Centralized Lecture Committee of the Toronto Hospital Schools of Nursing in order to facilitate an understanding of the qualifications and scope of work of the health supervisor. Such an appointee has a unique opportunity to develop a health point of view in the undergraduate nurse and thus to contribute to the health care of the patient and eventually to the community's program for public-health service.

SUGGESTED REQUIREMENTS FOR THE HEALTH SUPERVISOR ON THE STAFF OF THE HOSPITAL SCHOOL OF NURSING

PART I.

I.—Desirable Qualifications

A.—Registration following graduation from a recognized school of nursing.

B.—A minimum of one year of preparation in public health nursing.

C.—A minimum of two years of experience in the public health nursing field under supervision (preferably more and including a variety of activities).

D.—The equipment of this worker would be strengthened by teaching dealing with hospital relationships. As it becomes possible, she should have the preparation in educational and teaching principles which is required for the instructor in a good school of nursing.

II.—Standards and Scope of Work

A.—*Objectives*

1. To co-ordinate and give emphasis to all health activities within the hospital under the direction of the superintendent of the school of nursing.
2. To develop in the student:
   (a) A health and social point of view so that:
      (1) A healthful way of life may be adopted personally;
      (2) The patient may be the recipient of health nursing as well as sick nursing.
   (b) A better, rounded concept of the opportunities of nursing.

3. To build up in the hospital staff as a whole, a co-operative attitude toward health activities and opportunities within the hospital and a recognition of the relation of this work to a total community health program.

B.—*Methods of Attainment*

1. General Principles:
   (a) The primary function of this worker is to give leadership in health matters through health teaching: all else must be considered as subservient.
   (b) This health teaching should be introduced early and maintained consistently throughout the entire training.
   (c) This will be accomplished to a considerable extent through the active participation of the staff of the school.

2. Activities:
   (a) Student health service:

   The application of the principles of prevention through the complete physical examination (with X-rays of the chest), tests with necessary immunization, individual health practices and conferences.

   (b) Ward practice:

   An emphasis upon prevention in all services, such as medicine, surgery, obstetrics, children's communicable diseases, psychiatric, and the out-patients' department, with hospital social work as related to all of them. Mental as well as physical needs in nursing care should be recognized also in experience provided by all of these services.

   (c) Didactic teaching:
      (1) The Student:
      a. Individual and group conferences giving emphasis to the preventive and constructive aspects of nursing in the various services (medicine, surgery, obstetrics, etc.) as well as to the curative.
      b. An emphasis upon the preventive in all subjects such as nursing, the sciences, medicine, surgery, obstetrics, etc.
      c. A certain number of formal teaching periods associated with each year of the student's experience. The following plan is suggested:

      First year—
      i. Personal health.
      ii. An introduction with subsequent conference concerning the experience of the student in the out-patients' department and in hospital health service.

Second year:

i. Health teaching which may be given the patient.

ii. An introduction with subsequent conference to the work of public health agencies to which the students are assigned.

Third year:

i. Community health.

It is recommended that each series consist of a minimum of ten periods.

(2) The Patient:

Individual and group teaching along health lines.

(d) Community contact

The principle of repetition with learning over a maximum period of time operates here.

(1) The first year—

One week with hospital social work or hospital health service in the out-patients' department.

(2) The second year—

Two weeks in either the wards or the out-patients' department. During this time the students will be assigned to one of three public health agencies, that is, the Municipal Department of Public Health, the Victorian Order of Nurses, and the St. Elizabeth Nurses. This experience will be provided during the two days of each of two weeks.

(3) The third year—

Slight contact with the homes of the community planned in relation to services experienced.

(4) As can be planned—

One or two group visits are desirable if planned in conjunction with arrangements for students preparing for the field of public health nursing.

C.—*Appraisal of Work*

1. The degree to which health instruction provided has been effective in the life of the student and in her care of the patient should be taken into consideration in evaluating her total attainment in the school.
2. Records pertaining to the individual student should include an appraisal of this health attainment.

—*Florence H. M. Emory, Associate Director of the School of Nursing, University of Toronto, and Chairman of the Public Health Nursing Committee of the Centralized Lecture Course Committee of the Toronto Hospital Schools of Nursing.*

Abstracts

Employability of the Tuberculous. A Yardstick for Judging Placement and Supervision

MANY handicapped persons make good employees if proper medical supervision is available, but without proper job placement and adequate medical supervision, their employment may sharply increase insurance and operating costs.

Pulmonary tuberculosis is principally a disease of persons between the ages of 15 and 45, which age group corresponds with that of the bulk of industrial workers. This disease therefore is particularly adapted to control by thorough industrial physical examinations followed by a sound and consistent policy of placement and medical supervision. The discovery in early or inactive stages of individuals with evidence of tuberculosis, resultant from pre-placement examinations in large plants, together with the decisions made, has led in some instances to the establishment of patterns of sound management policy. In this article the authors present what are now thought to be sound criteria for the evaluation of employability of the tuberculous.

The recommendations for employment for (a) employees and (b) applicants are according to the following schedule:

I. Primary infection (pulmonary complex) calcified or healed: no restriction as to employment.

II. Re-infection disease (adult type):

A. *Healed and stable:*

1. Minimal involvement:
   (a) Employee: no restriction of employment except IIIA.
   (b) Applicant: any job no more strenuous than last previous one.
2. Moderate involvement:
   (a) Employee: no restriction of employment except IIIA.
   (b) Applicant: any job no more strenuous than last previous one.
3. Far advanced:
   (a) Employee: continue present job.
   (b) Applicant: employed only on light work.

B. *Arrested, quiescent or questionable:*

1. Minimal involvement:
   (a) Employee: continued on job requiring not more than moderate or intermittent physical work. (See IIIB, Supervision.)
   (b) Applicant: employment as emergency measure for sedentary job. (See IIIB.)
2. Moderate involvement:
   (a) Employee: light work or furlough for observation.
   (b) Applicant: preferably deferred, or temporary sedentary job.
3. Far advanced:
   (a) Employee: sedentary work or furlough for observation.
   (b) Applicant: deferred.

C. *Active lesion:*

1. Employee: furlough to sanatorium for treatment.
2. Applicant: refer to local health authorities for follow-up.

III. Additional considerations:

A. *Placement and transfer:*

1. No employee under 45 with **any** re-infection disease to work in an area with silica dust.
2. Employees over 45 to have such work only when they have minimal well-healed lesions.
3. Transfer of employees under medical supervision is not to be done without the approval of the medical department.

B. *Medical supervision:*

1. The best job placement is not to be confused with adequate medical supervision.
2. An arrangement for subsequent X-ray studies is to be made at the time of the pre-placement examination of every employee having evidence of adult-type disease in any form.
3. Weight records, afternoon temperatures and sputum examinations are to be rechecked following each sick absenteeism in

all arrested cases. Additional X-ray studies will also be made in case of any doubts.

4. The decisions on cases furloughed for observation or treatment at the sanatorium and the decisions on cases returning to work from observation or treatment should result from consultation with the family physician and State Tuberculosis Control officials.

Wayne L. Ritter and J. W. Dugger, Indust. Med., 1944, 13: 37.

The Lessons to be Learned from a Study of Infant Deaths

INFANT mortality in the United States decreased from a rate of 99.9 per 1,000 live births in 1915 to 48.7 in 1940. Deaths under 1 month of age decreased less rapidly—from 35.5 in 1927 to 29 in 1940, while those under 1 day showed almost no decrease in the same period. The decrease in infant mortality was in all causes but most strikingly in gastro-intestinal infections and communicable diseases, reflecting the better care of food and the increased prevention of contagious diseases. The neonatal group is less influenced by these factors, as the figures indicate.

In order for such progress to be maintained or improved, basic data on the problem needed collection and dissemination. A few studies on large numbers of fœtal, neonatal and infant deaths have been made based on correlated clinical and pathological findings. The three major causes have been clearly shown to be prematurity, birth trauma and infections. Each of these causes is interestingly discussed by the author. In prematurity, in addition to all the ordinary hazards, anoxia is frequent, due to underdevelopment of the alveoli. Likewise the kidneys and gastro-intestinal tract and skin are not developed to cope with the new environment. To deal with prematurity oxygen should be available, breast milk only used for feeding, an environment provided which is free from infection and in which temperature and humidity can be controlled.

The causes of birth injury are well known and it is recognized that the training of the obstetrician and facilities for labour and delivery have a direct bearing on the incidence of trauma. Deaths due to infection are predominantly respiratory, but umbilical, cutaneous and especially intestinal are also important. Intelligent vigilance does much to eliminate pathogenic bacteria from the environment of the infant.

The program of the Chicago Health Department in regard to infant mortality is presented in some detail. Attention was directed primarily to the three major factors discussed above. The results have been impressive, the infant mortality rate of 125 per 1,000 live births in 1915 being reduced to 28.4 in 1940, i.e., a rate 40 per cent less than that (48.7) for the United States. The rates in Chicago in 1940 for deaths under one day and one month were 10.8 and 20.3 respectively, compared with 13.9 and 29 for the United States as a whole.

Edith L. Potter, J.A.M.A., 1944, 124: 336.

"Cold Vaccines" and the Incidence of the Common Cold

BEFORE presenting their experimental findings, the authors review, in general terms, the theoretical and practical difficulties in the prevention of the common cold by oral or parenteral vaccines. The variability in medical reports on the subject is pointed out and reasons for this lack of unanimity analysed. From this it would appear that where suitable controls have been used vaccines have not been shown to be effective in preventing colds.

The experimental evidence presented in this paper is based on records from representative plants and offices where one group received vaccine, a second group received a placebo and a third group remained untreated. The experiment was conducted during the period October to April of 1941-42 and 1942-43. Two representative cold vaccines for hypodermic administration and three oral vaccines were used. The total number of persons in the study was 1,591. Selection of industrial groups for the study provided for the collection of accurate statistics as to the number of colds suffered, their severity and absence from work because of such infections.

The results obtained in the vaccinated (oral and parenteral) groups gave no evidence of prophylaxis against either the frequency or severity (including complications) of the

common cold when compared with the control groups (placebo and untreated). It is concluded "that there is nothing to recommend the indiscriminate use in industry of any cold vaccine included in this investigation."

Lemuel C. McGee, J.A.M.A., 1944, 124: 555.

The Health of New York City.

THIS editorial comment on the health report for New York City for 1943 highlights the important achievements and problems as portrayed by the data presented. Infant mortality which stood at 120 per 1,000 live births in 1900-09 was reduced to 30.2 in 1943, with a neonatal rate of 21.5 in contrast to 36.2 in 1910-19. The maternal mortality rate dropped to the very low level of 2.1, whereas in 1931 it stood at 6.0 per 1,000 live births. The effect of sulfonamides in reducing deaths from septic causes has likely played an important part in this improvement.

With a population of over 7½ million, there were only 281 cases of diphtheria notified in 1943. The annual average for 1910-19 with a much smaller population was 14,282. Measles and whooping-cough mortality rates showed a striking reduction over a ten-year period without any significant change in morbidity rates. On the negative side of the ledger is noted a marked rise in the incidence of meningococcal meningitis, a slight increase in the tuberculosis mortality rate (47.9), and a great increase in the prevalence of venereal disease. These changes could be ascribed to war conditions. Chronic diseases of later life—cancer, diabetes, and the cardiovascular renal groups—show the most striking increases in certified causes of death. These increases, however, would seem to be more apparent than real, since the general death rate has remained virtually unchanged in spite of an aging population.

The health commissioner is congratulated on the promptness with which the annual statistics are made available, as such procedure enhances their value and facilitates the appraisal of events and the planning of work for the new year.

Brit. M. J., 1944, March 11, p. 364.

Books

Nutritional Deficiencies, Diagnosis and Treatment. By John B. Youmans. 2nd ed., 1943. Montreal: J. B. Lippincott Company. 389 pages. $6.00.

DURING the past few years the diagnosis and extent of the incidence of nutritional deficiencies have received wide attention. This book is intended to provide a summary of present knowledge to furnish a proper understanding and management of nutritional deficiencies in medical practice. Dr. Youmans is well qualified by training and experience to be the author. The direction of several large nutritional surveys in the United States and in France has given him experience which is apparent in this volume.

After a general discussion in the first paper, Dr. Youmans discusses ten deficiencies of different nutrients. A final chapter deals with other possible nutritional deficiencies. In appendices are provided a tabular summary of information regarding the vitamins, a summary of principal food sources of essential nutrients, and descriptions of a number of laboratory procedures for the diagnosis of deficiencies.

The present situation regarding nutrition on this continent is that contentions have been made vigorously that there is a widespread occurrence of so-called sub-clinical deficiencies. These statements have been used as the basis for an evangelistic campaign to save the population. Many of the statements have not been tempered with scientific caution and will not bear critical inspection. Dr. Youmans has endeavoured to hold a commendable middle course. The precautions about the use and abuse of vitamins which are given in the first chapter are very sensible. With a desire to be cautious, Dr. Youmans gives, however, an impression of ambiguity. On pages 48 and 49 the following statements are made: "If only cases of manifest deficiency or beri beri areconsidered,the incidence of the disease (i.e., thiamin deficiency) in this country is very low. It is probable, however, that in the milder grades it is very common . . . nevertheless, mild deficiences are more com-

mon than has been thought in the past and should be watched for." For comparison with these claims of wide-spread thiamin deficiency it should be noted that on page 54, after a description of symptoms and signs of thiamin deficiency, the author states that these are not specific and on page 57 he says that there is no reliable clinical test for this particular deficiency. Similar ambiguities occur in the chapter on riboflavin and on ascorbic acid. Perhaps the best section of the book is that on vitamin D and calcium deficiencies.

While a number of criticisms of the book could be made, it does provide in readable and well-printed form a very useful discussion of nutritional deficiencies, a subject which is largely unfamiliar to most practising physicians.

E. W. MCHENRY.

Tuberculosis Reference Statistical Handbook. New York: New York Tuberculosis and Health Association, 386 Fourth Avenue, 1943.

THIS is a mimeographed report showing in four brief pages, with appended tables and graphs, the extent of the problem of tuberculosis morbidity and mortality in New York City, 1941 and 1942, and the ways and means employed in its control. The data are analyzed and compared with those of other large cities, States, Canada, Scotland, England and Wales. One misses any tabulation by or reference to age distribution. Salient points in these data and in the work of institutional services, clinics, hospitals and sanatoria are set forth so clearly and briefly that anyone, particularly if engaged in the work or supporting it, can see them "at a glance" and thus quickly form an appraisal of the situation.

In 1942, there were 3946 deaths from tuberculosis among residents of New York City, giving a death rate of 52 per 100,000 population. In the different sections, the rates ranged from 192 in the Central Harlem Health Centre, district of Manhattan, to 23 per 100,000 in the Maspeth-Forest Hills section and to 20 and 18 in the borough of Brooklyn. During the year, 31,617 cases received attention, with 21,703 known cases of pulmonary tuberculosis remaining on December 31, 1942. Dr. Drolet concludes this report with the following:

"So, as first noted, some gains continue to be made against tuberculosis, but they demand the full maintenance of intensive community-wide services. The human toll taken by the tubercle bacillus is still staggering. During the past five years alone in New York City there have been recorded a total of 18,491 deaths—every one of them premature by many years—and no less than 47,048 new cases were registered. And the end is not yet in sight! The present services and facilities afford the community a certain measure of protection, but they are as yet inadequate for a full control of this preventable disease."

Other health reports might well follow the example of this one.